

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-19 (Canceled).

Claim 20 (New): High-density fissile material nuclear fuel, in a form of an assembly of elementary wires, most of which are constituted by fissile material, wherein said elementary wires are assembled by stranding, braiding, or weaving and said assembly is contained in a stainless ductile casing, which elementary wires are compressed by deformation of said casing, and the elementary wires made of fissile material are fine enough to allow for size accommodation of the fuel under effects of irradiation during burnup and for gaseous fission products to be removed.

Claim 21 (New): Nuclear fuel according to claim 20, wherein the casing is deformed until gaps between the elementary wires occupy only 3 to 15 % of the internal cross-section of the casing after deformation.

Claim 22 (New): Nuclear fuel according to claim 20, wherein the casing is deformed so that the cross-section of the elementary wires is deformed, and the cross-sections of two adjacent of the elementary wires fit together.

Claim 23 (New): Nuclear fuel according to claim 20, wherein the fissile material is selected from the group including uranium, plutonium, americium, their alloys or a combination of several of these elements.

Claim 24 (New): Nuclear fuel according to claim 23, wherein said alloys are selected from the group including UMo and UAl.

Claim 25 (New): Nuclear fuel according to claim 24, wherein the fissile material is a UMo alloy comprising around 8 % by mass of molybdenum.

Claim 26 (New): Nuclear fuel according to claim 20, wherein the elementary wires have a diameter between 10 μm and 100 μm .

Claim 27 (New): Nuclear fuel according to claim 20, wherein the assembly of elementary wires includes only elementary wires having the same composition.

Claim 28 (New): Nuclear fuel according to claim 20, wherein the assembly of elementary wires includes elementary wires having different compositions.

Claim 29 (New): Nuclear fuel according to claim 20, wherein the elementary wires have identical diameters.

Claim 30 (New): Nuclear fuel according to claim 20, wherein the elementary wires have different diameters.

Claim 31 (New): Nuclear fuel according to claim 20, wherein the assembly of elementary wires has a braid form.

Claim 32 (New): Nuclear fuel according to claim 20, wherein the assembly of elementary wires has a strand form.

Claim 33 (New): Nuclear fuel according to claim 32, wherein the strand form is a compound strand free of a central strand.

Claim 34 (New): Nuclear fuel according to claim 20, wherein the assembly of elementary wires is woven.

Claim 35 (New): Method for producing a nuclear fuel according to claim 20, comprising:

producing elementary wires having a predetermined composition, most of which are wires of fissile material;

producing at least one assembly using said elementary wires;

placing the assembly in a stainless ductile casing; and

shaping the filled casing.

Claim 36 (New): Method for producing a nuclear fuel according to claim 35, wherein the casing is a tube, there is only one assembly, and it is shaped by drawing through a drawplate or by rolling.

Claim 37 (New): Method for producing a nuclear fuel according to claim 35, wherein the casing is a tube, there is only one assembly, and it is shaped by roller burnishing.

Claim 38 (New): Method according to claim 35, wherein the casing is flattened and contains plural assemblies placed parallel with respect to one another in a uniform manner, and the shaping of the casing thus filled is performed by pressing or rolling.